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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/695,001  
Filing Date: October 29, 2003  
Appellant(s): NISHIYAMA ET AL.

MAILED  
DEC 20 2007  
GROUP 2800

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Adam Keser  
Registration No. 54,217  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 10/24/2007 appealing from the Office action mailed 03/09/2007.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

Although the Examiner agree to the statement of the summary of claimed subject matter, however, the substance of the summary regarding the "additional support for position can be found in Figure 2 of Lebby, similar to that shown in Figure 1", is strongly disagree by the Examiner.

The detail of which will be presented in the Response to Argument.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

5,838,703                    Lebby et al.                    17-11-1998

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

**Claim Rejections - 35 USC § 102**

1. The following is a quotation of 35 U.S.C. 102(b) which forms the basis for all obviousness rejections set forth in this Office action:

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-6 are rejected under 35 U.S.C. 102(b) as being unpatentable over Lebby et al. (US 5838703).

With respect to claim 1, Lebby et al. '703 shows and discloses a semiconductor laser assembly (**TITLE**) comprising: a substrate including a first mount surface and a second mount surface (*Fig 1: a first and second mount surfaces where photodiode 16 and laser 14 mounted on substrate 13*); a submount mounted on the first mount surface of the substrate (*Fig 1: a first submount under laser 14 mounted on first mount surface*

of substrate 13); a laser diode mounted on the submount and having at least one light emission point and an electrode (*Fig 1: 14 laser with light emission mounted on submount with an electrode where metal wire 26 connecting to*); and a monitoring photodiode mounted on the second mount surface of the substrate and having a light-receiving surface which receives light emitted from the light emission point (*Fig 2: 48 photodiode receiving light from laser mounted on second mount surface*), and a relay electrode connected to the electrode of the laser diode by a metal wire (*Fig 1: a relay electrode metal wire 26 connected to the laser*).

### **Claim Rejections - 35 USC § 103**

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or non-obviousness.

4. Claims 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lebby et al. (US 5838703).

With respect to claim 7, the claim further requires wherein the submount is made of an insulating material having higher heat conductivity than the monitoring photodiode. Lebby et al. '703 shows and discloses the above, but Lebby et al. '703 did not discretely disclose the submount heat conductivity of the laser is higher than the monitor photodiode. It has been held that omission of an element and its function in a combination where the remaining elements perform the same functions as before involves only routine skill in the art, in this case it is well known in the art that laser elements frequently mounted on high heat conductor element to reduce heat generate from the laser to increase its operational life.

With respect to claim 8, the claim further requires wherein the submount has a length in a direction of an optical axis of the laser diode that is approximately equal to a resonator length of the laser diode. Lebby et al. '703 did not discretely disclose the submount has a length approximately equal to the laser resonator length. It has been held where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art.

With respect to claims 9, 10 the claim further requires wherein at least one additional laser diode is mounted on the submount, said additional laser diode also has at least one light emission point and an electrode, and the monitoring photodiode is provided with an additional relay electrode connected to the electrode of said additional laser diode by a metal wire. It has been held that mere duplication of the essential working parts of a device involves only routine skill in the art, in this case having

multiple light emission laser in the same system to increase its power output or increase the system operation ranges.

5. Claims 13, 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lebby et al. (US 5838703) in view of PRIOR ART (Fig 7a).

With respect to claim 13, and 14 Lebby et al. '703 discloses the above, the claims further requires wherein the substrate is composed of a metal lead and the relay metal wire electrode is connected to the substrate. PRIOR ART (Fig 7a: 205c) shows a relay metal wire lead is connecting to substrate. It would have been obvious to one of ordinary skill in the art to provide Lebby '703 the element as taught or suggested by PRIOR ART (Fig 7a: 205c) to ground the laser system for operation stability.

**(10) Response to Argument (page 3-4)**

**A. Lebby Does Not Disclose a Laser Diode Mounted on a Submount**

Regarding the Appellant's argument directed to independent claims 1-6, the Appellant argues that the Lebby et al. reference (US 5,838,703) does not disclose or suggest "a submount mounted on the first mount surface of the substrate" or "a laser diode mounted on the submount," as recited in Appellants' claim 1. The Appellant continues to point out "Lebby does not disclose a submount under the laser 14; Lebby discloses a single laser device 14 having two layers." In addition, the Appellant applied (US 5256596) which was not part of the rejection to shows "a VCSEL having a ridge layer and an active layer and these are both shown in Figures 1 and 2." The Appellant

equate figures 1 & 2 and devices 14 & 46 are the same, even thought noted "the Examiner" has pointed out "Figures 1 and 2 depict different embodiments.

The examiner points out the claim does show "a submount mounted on the first mount surface of the substrate" or "a laser diode mounted on the submount,"

a semiconductor laser assembly (*TITLE*) comprising: a substrate including a first mount surface and a second mount surface (*Fig 1: a first and second mount surfaces where photodiode 16 and laser 14 mounted on substrate 13*); a submount mounted on the first mount surface of the substrate (*Fig 1: a first submount under laser 14 mounted on first mount surface of substrate 13*); a laser diode mounted on the submount and having at least one light emission point and an electrode (*Fig 1: 14 laser with light emission mounted on submount with an electrode where metal wire 26 connecting to*); and a monitoring photodiode mounted on the second mount surface of the substrate and having a light-receiving surface which receives light emitted from the light emission point (*Fig 2: 48 photodiode receiving light from laser mounted on second mount surface*), and a relay electrode connected to the electrode of the laser diode by a metal wire (*Fig 1: a relay electrode metal wire 26 connected to the laser*).

As pointed out in the Lebby et al. Summary Of The Invention "the VCSEL mounting structure capable of providing support for mounting of the **VCSEL Col 2: 28-34**; where the mounting structure can be formed as one molded piece or as separate pieces,... thereby protecting the VCSEL from degradation due to thermal expansion and mechanical stress **Col 2: 50-58**). Next, Lebby et al. Brief Description of the Drawing, states that Fig 1 is a first embodiment and Fig 2 is a second embodiment, illustrating a different surface mounting package. Furthermore, there is no where in the reference

correlate VCSEL's 14 and 46 positions as identical. This can further be seen on Fig 2, where a submount has been used to raise the photodiode PD 48 to a different height, which was not implemented in Fig 1: PD 16.

**B. Lebby Does Not Disclose a Relay Electrode (page 5-6)**

The Appellant's argues Lebby does not disclose or suggest "*a relay electrode connected to the electrode of the laser diode by a metal wire.*" "The Examiner has cited the 'plurality of bond wire interconnects 26 the VCSEL 14 and the photodetector 16 as shown in Figure 1; although Lebby may disclose a metal wire, Lebby does not disclose or suggest a relay electrode connected to a wire as recited in claim 1."

The examiner points out Fig 1 #26 shows the metal wire connecting to the laser diode. It is inherent and within one skill in the art to recognize that the laser-diode has to have electrode so that current/source/power can pass through and energize the laser diode. It is inherent and well known in the art, as VCSEL/laser diode place/mount/weld on the submount/circuit plate, the laser diode is weld/mount on to the relay-electrode so that power/current/source can be transmitted to the laser-diode. Without having "metal-wire" connect to "relay electrode" to transmit power/source to the "laser-diode's electrode" the laser is non-operational.

**C. Claims 7-10 Depend From Allowable Claim 1 (page 6)**

The Appellant's argues "Lebby fails to disclose or suggest both a submount and a relay electrode as recited in claim 1, which is therefore allowable."

The Examiner wants to point out Lebby does disclose and suggest both a submount and a relay electrode as recited in claim 1, see section A and B explanation.

**D. Claims 13 and 14 Depend From Allowable Claim 1 (page 6)**

The Appellant's argues Lebby only disclosing a metal wire attached to the substrate and fails to overcome the deficiencies as recited in claim 1, which is therefore allowable.

The Examiner wants to point out Lebby does disclose and suggest the limitation require by the claim as recited in claim 1, see section A and B explanation.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reason, it is believed that the rejections should be sustained.

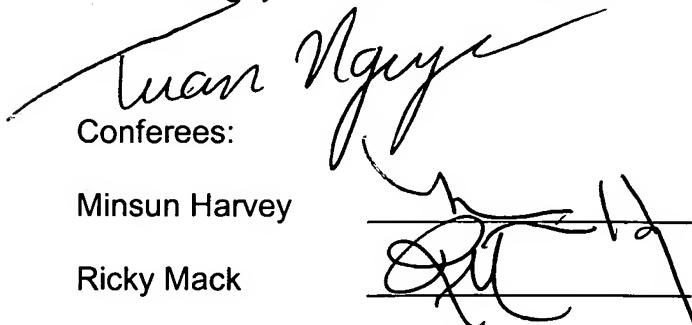
Respectfully submitted,

Tuan N. Nguyen, Examiner of Record

Conferees:

Minsun Harvey

Ricky Mack



A handwritten signature of Tuan N. Nguyen is written over the names of his conferees. Below the signature, there is a handwritten mark consisting of a stylized 'X' and a vertical line.